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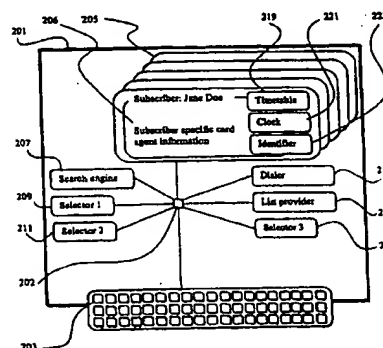
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(54) Title: METHOD AND APPARATUS FOR SELECTING A TELEPHONE NUMBER AND PLACING A CALL

(57) Abstract

A method and apparatus in which a character sequence is used to search subscriber specific card agents, each of them associated with information related to a specific subscriber. One of the subscriber specific card agents associated with information that matches at least a portion of the character sequence is identified. If there are multiple subscriber specific card agents that match at least a portion of the character sequence, one of them has to be identified, e.g., manually or through some specific procedure. The relevant telephone number is then selected according to a procedure specified by the identified subscriber specific card agent. The selected telephone number can be accepted or rejected, e.g., automatically or manually. According to another aspect of the present invention, a relevant telephone number is selected in a business communicator. A character sequence is used to search business person specific card agents, each of them associated with information related to a specific business person. One of the card agents associated with information that matches at least a portion of the character sequence is identified. The relevant telephone number is then selected according to a procedure specified by the identified card agent, in which procedure a time table, which specifies different telephone numbers for different times, is consulted, current time is detected, and the relevant telephone number is then selected based on the time table and the current time.



219 = emploi du temps  
221 = horloge  
223 = identificateur  
213 = composeur automatique  
215 = fournisseur de date  
209/211/217 = sélecteur 1, 2, 3  
207 = moteur de recherche  
206 = renseignement agent de carte spécifique à abonné  
rue... = abonné : Jane Do

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**METHOD AND APPARATUS FOR SELECTING A TELEPHONE NUMBER AND  
PLACING A CALL**

**BACKGROUND OF THE INVENTION**

The present invention relates to a communications device, particularly a mobile terminal such as business communicator, and to a communications system comprising such a device. More  
5 specifically, the invention relates to a method and apparatus for placing a call comprising mapping of a character sequence, such as, e.g., a name, a telephone number or a portion thereof, to a relevant telephone number.

A new class of mobile terminals has recently evolved including  
10 a computer integrated into a communications device. Such a device is often referred to as a business communicator since the target audience is mainly travelling business persons.

When placing a call using such a business communicator, the business person may not remember the complete telephone number  
15 or the complete name of the person he is trying to call. Typically, current business communicators require the user to type the telephone number or the name completely and accurately.

Another problem may be that the user does not know which  
20 telephone number to use if there are multiple telephone numbers associated with the party to be called. In today's modern business world, it is more and more likely that this is the case.

Yet another problem arises when the user only knows one  
25 telephone number, such as a number to a fixed telephone, associated with the party to be called, but wants to use, or may have to use, another telephone number, such as a number to a cellular phone, for communication.

For other types of communications terminals, such as fixed  
30 automatic telephone dialing equipment and repertory telephone

dialer systems, several devices for searching subscribers have been proposed, among them those depicted in US Patent no. 4,341,929 issued to R. D. Alexander et al. and US Patent no. 4,475,013 issued to Y. C. Cheng et al.

- 5 The Alexander et al. patent is directed to a memory accessing system, which searches for an input character sequence anywhere in stored words each time an additional character is entered until only one word is found to contain the sequence of characters required. A signal is generated to indicate that a  
10 match has been made. The words may contain names and telephone numbers. The system may be combined with automatic dialing of the number retrieved.

The Cheng et al. reference describes an automatic telephone dialing apparatus, which encompasses a microprocessor, a  
15 keyboard and control and routing circuits. By depressing keys representing the first few letters of a name, automatic dialing of a number corresponding to that name is achieved. The apparatus also includes means for browsing through a series of names that have the same first several letters.

- 20 Both these devices as described need an input character sequence that exactly matches a name, a number or a portion thereof. The latter also needs the input sequence to match the beginning of a name or a number. The former device does not solve the problem of only knowing a character sequence that matches multiple  
25 names. Neither of the documents addresses the two latter problems as described above.

#### SUMMARY OF THE INVENTION

- It is an object of the present invention to provide a method and apparatus in a communications device, particularly a mobile  
30 terminal such as a business communicator, which eliminates the problems associated with the prior art through mapping a

character sequence to a relevant telephone number, and for placing a call using the relevant telephone number.

It is a further object of the invention to provide a method and apparatus, which increases both speed and convenience in  
5 accessing the relevant telephone number and placing the call.

These objects, among others, are fulfilled, according to one aspect of the present invention, by a method and apparatus in which a character sequence is used to search subscriber specific card agents, each of them associated with information  
10 related to a specific subscriber. One of the subscriber specific card agents associated with information that matches at least a portion of the character sequence is identified. If there are multiple subscriber specific card agents that match at least a portion of the character sequence, one of them has to be  
15 identified, e.g., manually or through some specific procedure. The relevant telephone number is then selected according to a procedure specified by the identified subscriber specific card agent.

The selected telephone number can be accepted or rejected, e.g.,  
20 automatically or manually. If the selected telephone number is accepted, the call is placed using the selected telephone number. If, on the other hand, the selected telephone number is rejected, a list of alternative telephone numbers specified by the identified subscriber specific card agent is provided, one  
25 of the listed alternative telephone numbers is selected and the call is placed using the selected listed alternative telephone number.

The selected telephone number may be accepted, preferably automatically, if the character sequence and the selected  
30 telephone number match or if the identified subscriber specific card agent is flagging the selected telephone number as being

the only telephone number associated with that subscriber specific card agent.

The inventive method and apparatus may let a user of the communications device determine whether to accept or reject the  
5 selected telephone number, particularly if the character sequence and the selected telephone number do not match.

According to another aspect of the present invention a relevant telephone number is selected in a business communicator. A character sequence is used to search business person specific  
10 card agents, each of them associated with information related to a specific business person. One of the card agents associated with information that matches at least a portion of the character sequence is identified. The relevant telephone number  
15 is then selected according to a procedure specified by the identified card agent, in which procedure a time table, which specifies different telephone numbers for different times, is consulted, current time is detected, and the relevant telephone number is then selected based on the time table and the current  
20 time. Preferably, the time table and the current time are updated when the communications device or part thereof enters a different time zone.

The present invention may also comprise letting the user cancel the mapping and/or placing of the call, e.g. when the subscriber specific card agent has been identified or at any other moment.

25 An advantage of the present invention is that it may be implemented in a plurality of ways giving the user a variety of services that facilitates the accessing of a party to call and of a relevant telephone number to use for placing a call.

Another advantage of the invention is that it gives the user an  
30 easy and fast way of accessing business card agents for all kind of purposes.

Still another advantage is that no extra network load is introduced if the inventive method and apparatus is integrated in the communications terminal and if the subscriber specific card agents do not use the network when retrieving the subscriber specific information.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and advantages of the present invention will become apparent from the detailed description given hereinbelow and the accompanying Figs. 1-4 which are given by way of illustration only, and thus are not limitative of the present invention.

Figs. 1a and 1b show a flowchart depicting a method for placing a call according the present invention.

Fig. 2 shows an apparatus for placing a call according to the present invention

Fig. 3 shows an example of a typical output screen of a search resulting in several business card agents.

Fig. 4 shows an example of a typical output screen of a search resulting in one business card agent or of a search resulting in several business card agents of which one has been chosen.

Fig. 5 shows an example of a typical resulting output screen after a selected subscriber telephone number to be used for the communication has been rejected.

#### DETAILED DESCRIPTION OF THE INVENTION

In the following description, for purposes of explanation and not limitation, specific details are set fourth, such as particular applications, techniques, etc. in order to provide a thorough understanding of the present invention. However, it will be apparent to one skilled in the art that the present

invention may be practiced in other versions that depart from these specific details. In other instances, detailed descriptions of well-known methods, protocols, devices, and circuits are omitted so as not to obscure the description of the present invention with unnecessary details.

The present invention is preferably software implemented and integrated in a business communicator comprising a communications device, a microprocessor, a memory, a screen and a keyboard, but it may equally be integrated in other types of communications terminals or systems. Any of these devices is, in the following detailed description, referred to as a business communicator.

In Figs. 1a and 1b a flowchart is shown depicting a method for placing a call according to a version of the present invention.

The inventive method may be initiated 101 through activating a keyboard button or automatically when activating the business communicator or a dialing function of the communicator. A user of the business communicator is, via an informing device, such as a screen or an audio speaker, asked 103 to enter a character sequence, which preferably should be a sequence that the user believes would identify one or several subscribers, e.g., a name, a telephone number, or a portion thereof. The user enters 105 the sequence through an input device, such as a keyboard, or by choosing a sequence from a dial history area. The dial history area may comprise a list of recently used telephone numbers or names associated with these telephone numbers. A number of subscriber specific card agents are searched for the character sequence, or a portion thereof. Each of the subscriber specific card agents is associated with information related to a specific subscriber. All subscriber specific card agents associated with information that matches the character sequence, or a part thereof, are distinguished 107.



Note that any known search method is compatible with the present invention. Preferably, a powerful search engine that also would consider misspelled words is employed. The search engine should find the subscriber specific card agent or agents that provide the information that in some way best matches the character sequence. A simpler search engine would be appropriate if the card agents are implemented with a high level of intelligence so that they are capable of assisting with the search, e.g., by providing the information in a variety of modes.

The information provided by the subscriber specific card agents might be of any type, e.g., names, aliases, telephone numbers, facsimile numbers, e-mail identities or any other data. The subscriber specific card agents may also be referred to as subscriber card agents, card agents, business person specific card agents, business card agents or the like.

The subscriber specific card agents may provide their respective information in a variety of ways. The simplest way is to provide the information as a number of passive data fields, but other more sophisticated methods are also possible. For instance, some card agents may use procedures, e.g., software implemented, for retrieving the information to be provided. Yet other card agents may even send and receive data through the network, e.g. retrieve the information, or part thereof, from a central database stored in a central node of the network.

One important feature of the card agents is that a specific subscriber, i.e. a called party, to which a card agent is associated, may specify the information. The information is then sent to the user (the calling party) via SMS (Short Messaging Service), e-mail or some non-standardized text message. The information may in this way be modified continuously in order to keep it up to date. This is very advantageous since the specific subscriber would be the first to know whether the subscriber's

information has changed, such as a change in telephone number or address. The subscriber may send this information as a multicast message to all card agents associated with him throughout the network, i.e. to all users holding his card agent. However, the user of a card agent is preferably the deciding party as regards whether to perform a change of the information. Consequently, the user may hinder an update as described.

The inventive method further counts the number of distinguished matches and continues with different steps depending on the outcome 109, 117. First, it is, according to the present version of the present invention, determined 109 whether multiple matches are matched. If that is the case information of the matched subscriber specific card agents, particularly of the names of the subscribers, is provided 111 to the user and the user is asked 111 to choose one of the distinguished and informed subscriber card agents. One of these is identified and chosen 113 by the user. Thereafter, it is checked 115 whether the number of telephone numbers associated with this chosen subscriber card agent are more than one.

If multiple subscriber card agents are not distinguished it is checked 117 whether exactly one subscriber card agent is matched.

If exactly one subscriber card agent is matched this subscriber card agent is identified as the only one. It is then determined 115 whether the number of telephone numbers associated with that subscriber card agent is more than one.

If no matched subscriber card agents are found, the method is terminated 119. Alternatively, the method may return to step 103 and ask the user to enter another character sequence. Additionally, the user may be informed of the search results (not shown in Fig. 1a).

When one of the subscriber card agents has been identified, it is, as already mentioned, checked 115 whether there are multiple telephone numbers associated with the corresponding card agent. If there are, it is checked 121 whether a particular telephone number of the multiple numbers is selected or proposed by the subscriber specific card agent as the relevant telephone number to be used for this particular call.

If, on the other hand, there is only one telephone number associated to the subscriber, the call is placed 122 using that specific telephone number. After placing the call the method is terminated 119.

Returning to the case of multiple telephone numbers and to the checking 121 if a particular telephone number is selected or not. The particular telephone number is selected according to a procedure specified by the identified subscriber specific card agent. It may be done in a variety of ways. For example, the telephone number may be determined by the subscriber associated with the identified card agent or by the user. In addition, it may be determined as function of date and time.

If a particular telephone number is selected 123, it is checked 127 whether this selected telephone number is equal to the entered character sequence, as shown in Fig. 1b. If they are equal, the selected telephone number is accepted and the call is placed 129, using the selected and entered telephone number and the method is terminated 131. If they are not equal, the user is asked 133 whether to use the selected telephone number.

Alternatively, instead of performing step 129 and 131, step 133 may be performed directly after step 121, giving a more dynamic method (not shown in Figs. 1a and 1b). This allows the user to choose a telephone number other than the entered and

selected telephone number, but at the cost of a slight time delay.

In response to being asked 133 whether to use the proposed telephone number, the user enters 135 an answer, which is  
5 determined 137 to be either positive (YES) or negative (NO).

If the answer received is positive, the call is placed 129 using the proposed and entered telephone number and then the method terminates 131.

If the answer received is negative, the user is informed 139 of  
10 available alternative telephone numbers associated with the subscriber. The corresponding subscriber card agent provides these alternative telephone numbers, preferably via a list.

The user is then asked 141 which of the available alternative telephone numbers to use and the user selects 143 one of the  
15 available alternative telephone numbers. The call is placed 143 using that selected telephone number and the method is terminated 131.

Referring now to the case where there are no proposed telephone numbers 125, the method follows the same procedure 139, 141,  
20 143, 131 as if the user rejected a proposed telephone number. The method informs 139 the user of available telephone numbers associated with the subscriber card agent, asking 141 the user which of them to use, waiting for a selection and based on that selection 143 placing the call followed by terminating 131 the  
25 method.

The method is preferably implemented in such manner that the user may interrupt or cancel at any moment in the method.

An apparatus 201 implementing the method as described may comprise a central control unit 202 such as a processor, a

character sequence entering device 203, one or more subscriber specific card agents 205, a search engine 207, a first, a second and a third selector 209, 211, 217, a dialer 213 and a list provider 215.

- 5 Each of subscriber specific card agents 205 is associated with information 206 related to a specific subscriber. The search engine 207 is arranged to search the information and identify one of the subscriber specific card agents. The first selector 209 is arranged to select a relevant telephone number according  
10 to the identified card agent. The second selector 211 is arranged to accept or reject the selected telephone number.

The dialer 213 is arranged to, in the event of the selected telephone number is accepted, place the call using the selected telephone number.

- 15 The list provider 215, the third selector 217 and the dialer 213 are arranged to, in the event of the selected telephone number is rejected, provide a list of alternative telephone numbers specified by the identified card agent, select one of the listed alternative telephone numbers, and place the call using the  
20 selected listed alternative telephone number.

- The identified subscriber card agent may further comprise a time table 219, specifying different telephone numbers for different times, a clock detecting current time, and an identifier 223 for, based on the time table and the current time, identifying a  
25 telephone number. The first selector 209 is then, preferably, arranged to select the identified telephone number.

- The inventive apparatus may also comprise a screen for informing the user. Fig. 3 shows an example of a typical output screen 301 of a search distinguishing multiple subscriber specific card  
30 agents.

A field 303 shown in the upper part of the screen displays the input character sequence. In the example shown Fig. 2 the field displays "Doe".

Furthermore, the names of the subscribers 305 associated with the distinguished subscriber specific card agents are listed on the screen. In the example "Jane Doe", "Jennifer Anne Doe", and "Steve S. Doerser" have been distinguished as the subscribers that are associated with the subscriber specific card agent matching the entered character sequence or a portion thereof.

The user is asked to choose one of the subscribers 307 by marking him/her 309 and activating a "Continue" button 311. This corresponds to step 111 of Fig. 1a.

The user has also the possibility of canceling further execution of the method by activating a "Cancel" button 313, whereby the method is terminated.

The user marks in the example "Jane Doe" and activates the "Continue" button. The method identifies, and selects a relevant telephone number according the procedure specified by the subscriber specific card agent, whereby the steps 121, 123, 127, according to the method as depicted in Figs. 1a and 1b, is followed. The resulting output screen, through which the user is asked if the selected telephone number should be chosen (133 of Fig. 1b), may look like the one shown in Fig. 4.

The field 303 is still showing the entered character sequence in the upper part of the screen. A name field 405 shows the name of the subscriber associated with the selected subscriber specific card agent. Furthermore, the address 407 or other subscriber specific information of the subscriber is listed on the screen. In the example of Fig. 3, "1234 Downthe Rd, Raleigh, NC 12345, USA" is shown.

The user is asked 409 to activate a "Call" button 411 if the user wants to use the proposed telephone number 410 for placing the call. If the user instead wants to use another available telephone number associated with the subscriber a button "Other" 413 is activated. The "Cancel" button 313 is still available for terminating the method.

According to the present example the user does not want to call the person "Jane Doe" at home. The user activates the "Other" button. The method rejects, consequently, the proposed number (corresponding to a negative answer in step 137 of Fig. 1b) and lists the available telephone numbers associated to the subscriber specific card agent (corresponding to step 139 of Fig. 1b). The resulting output screen may look like the one shown in Fig. 5.

15 The field 303 is still showing the entered character sequence in the upper part of the screen and the name field 405 is still showing the subscriber name. In addition, multiple telephone numbers 507 associated with the subscriber specific card agent are listed on the screen. In the example "Work 555-1214", "Home 20 555-1215", "Mobile 555-1216", and "Pager 555-1217" are shown.

The user is asked 509 to choose a telephone number such as the work number 511 as shown in the Figure. After choosing a telephone number, the user activates "Call" button 513 which places the call. If the user instead wants to cancel the call 25 the "Cancel" button 313 is activated, whereby the method is terminated. Note that the different buttons described may instead be other symbols such as icons or the like.

In another version of the present invention a method and apparatus in a business communicator of a cellular 30 communications network is aimed for selecting a relevant telephone number.

This version of the present invention will now be described with reference numerals to the earlier depicted Figs. 1a, 1b and 2. The apparatus 201 comprises a keyboard 203 for entering 105 a character sequence, business card agents 205, each of them  
5 associated with information 206 related to a specific businessperson, and a search engine 207 for searching 107 the information and identifying 107, 109, 111, 113, 117 one of the business card agents associated with information that matches the character sequence.

- 10 Each of the business card agents comprise a time table 219 specifying different telephone numbers for different times, a clock 221 detecting current time, and an identifier 223 for, based on the time table and the current time, identifying and selecting the relevant telephone number.
- 15 Preferably, the subscriber specific card agents are arranged to update their time table and clock in the event a different time zone is entered.

The apparatus, according the present version of the invention, implements a method as depicted above that is equivalent with  
20 the first version of the present invention excluding the step of accepting or rejecting the selected telephone number and the following steps which result in placing the call.

However, the apparatus may implement such functions, i.e., a second selector 211, a dialer 213, a list provider 215, and a  
25 third selector 217. The second selector is then used to accept or reject the identified and selected relevant telephone number. The dialer is, *inter alia*, used for placing the call using the selected telephone number if it is accepted. If, on the other hand, the selected telephone number is rejected, the list  
30 provider provides a list of alternative telephone numbers specified by the identified business card agent. The third selector selects one of the listed alternative telephone numbers



and the dialer places the call using the selected listed alternative telephone number.

Preferably, the second selector is arranged to let a user of the business communicator determine whether to accept or reject the  
5 selected telephone number.

In conclusion, the method and apparatus for selecting a relevant telephone number and for placing a call using the selected relevant telephone number, fulfills, according to the present invention, such needs as to place a call without  
10 knowledge of a complete telephone number or a complete name of the party to be called, or without knowledge of which telephone number to use if there are multiple telephone numbers associated with the party to be called.

Advantages of the present invention include considerably  
15 increased speed and convenience in accessing the relevant telephone number and placing a call, possibilities to be implemented in several ways giving the user a variety of services. The subscriber or business card agents give the user an easy and fast way of accessing information for a plurality of  
20 purposes.

No extra network load is introduced if the inventive method and apparatus is integrated in the communications terminal and if the subscriber specific card agents do not use the network when retrieving the subscriber specific information.

25 The invention being thus described, it will be obvious that the same may be varied in a plurality of ways. Such variations are not to be regarded as a departure from the scope of the invention. All such modifications as would be obvious to one skilled in the art are intended to be included within the scope  
30 of the appended claims.

## WHAT IS CLAIMED IS:

1. In a communications device a method for placing a call comprising the steps of:
  - (i) entering a character sequence;
  - (ii) providing one or more subscriber specific card agents,  
5       each of the subscriber specific card agents associated  
          with information related to a specific subscriber;
  - (iii) searching the information;
  - (iv) identifying one of the subscriber specific card agents  
          associated with information that matches at least a  
10       portion of the character sequence;
  - (v) selecting a telephone number according to a procedure  
          specified by the identified one of the subscriber  
          specific card agents;
  - (vi) accepting or rejecting the selected telephone number;
  - 15   (vii) in the event of accepting the selected telephone number,  
          placing a call using the selected telephone number; and
  - (viii) in the event of rejecting the selected telephone number,  
          providing a list of alternative telephone numbers  
          specified by the identified one of the subscriber  
20       specific card agents, selecting one of the listed  
          alternative telephone numbers, and placing a call using  
          the selected listed alternative telephone number.
2. The method as defined in claim 1, comprising performing the steps of accepting the selected telephone number and placing the call using the selected telephone number in the event that the character sequence and the selected telephone number match.

3. The method as defined in claim 1, comprising performing the steps of accepting the selected telephone number and placing the call using the selected telephone number in the event that the identified one of the subscriber specific card agents is
- 5 flagging the selected telephone number as being the only telephone number associated with that identified one of the subscriber specific card agents.
4. The method as defined in claim 1, comprises letting a user of the communications device determine whether accepting or rejecting the selected telephone number.
5. The method as defined in claim 4, comprises performing the step of letting in the event that the character sequence and the selected telephone number do not match.
6. The method as defined in claim 1, wherein the procedure specified by the identified one of the subscriber specific card agents comprises the steps of:
- 5 (i) providing a time table specifying different telephone numbers for different times;
- (ii) detecting a current time; and identifying the telephone number to be selected based on the time table and the current time.
7. The method as defined in claim 6, further comprising updating the time table and the current time in the event of entering a different time zone.

1(6)

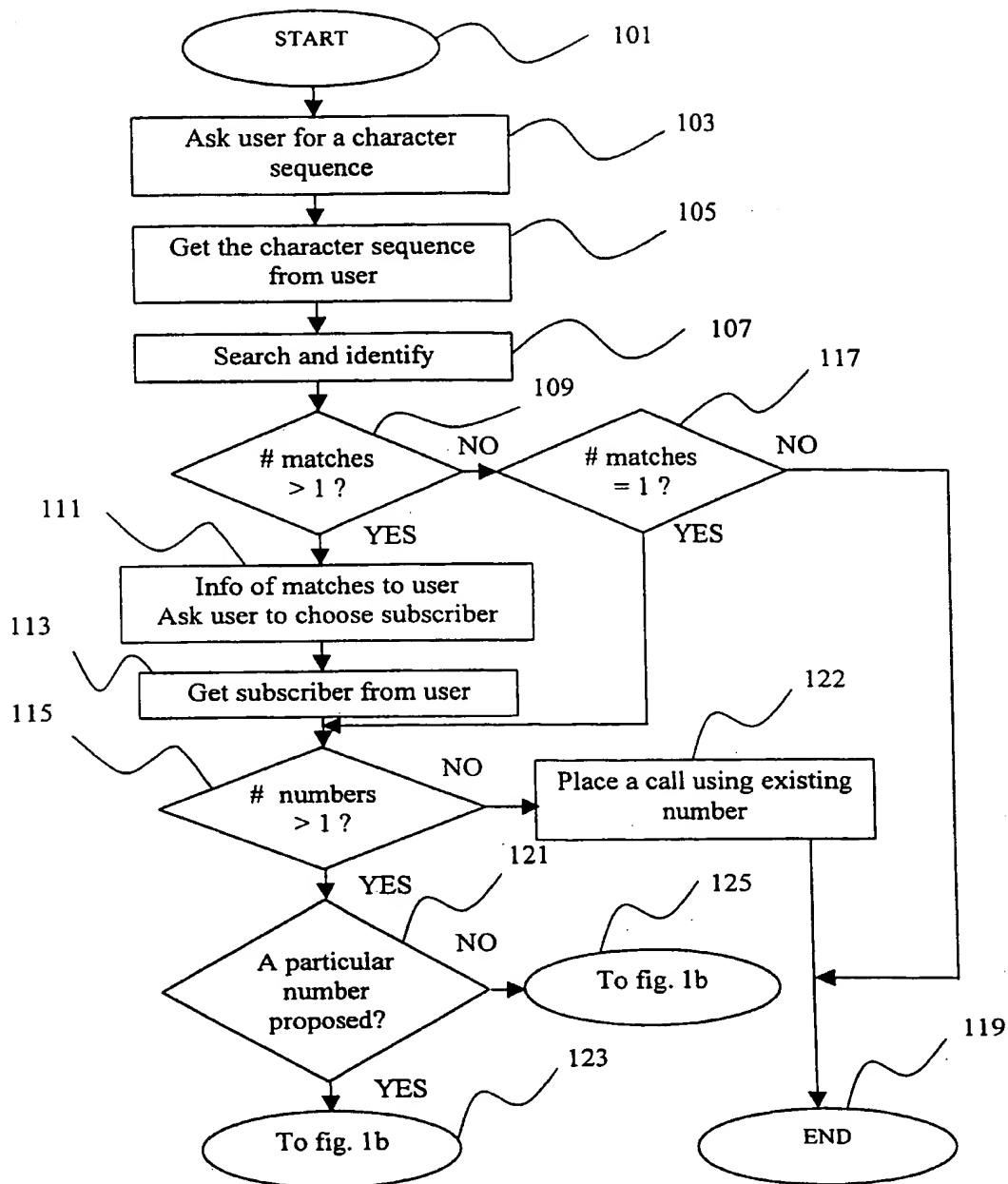


Fig. 1a

2(6)

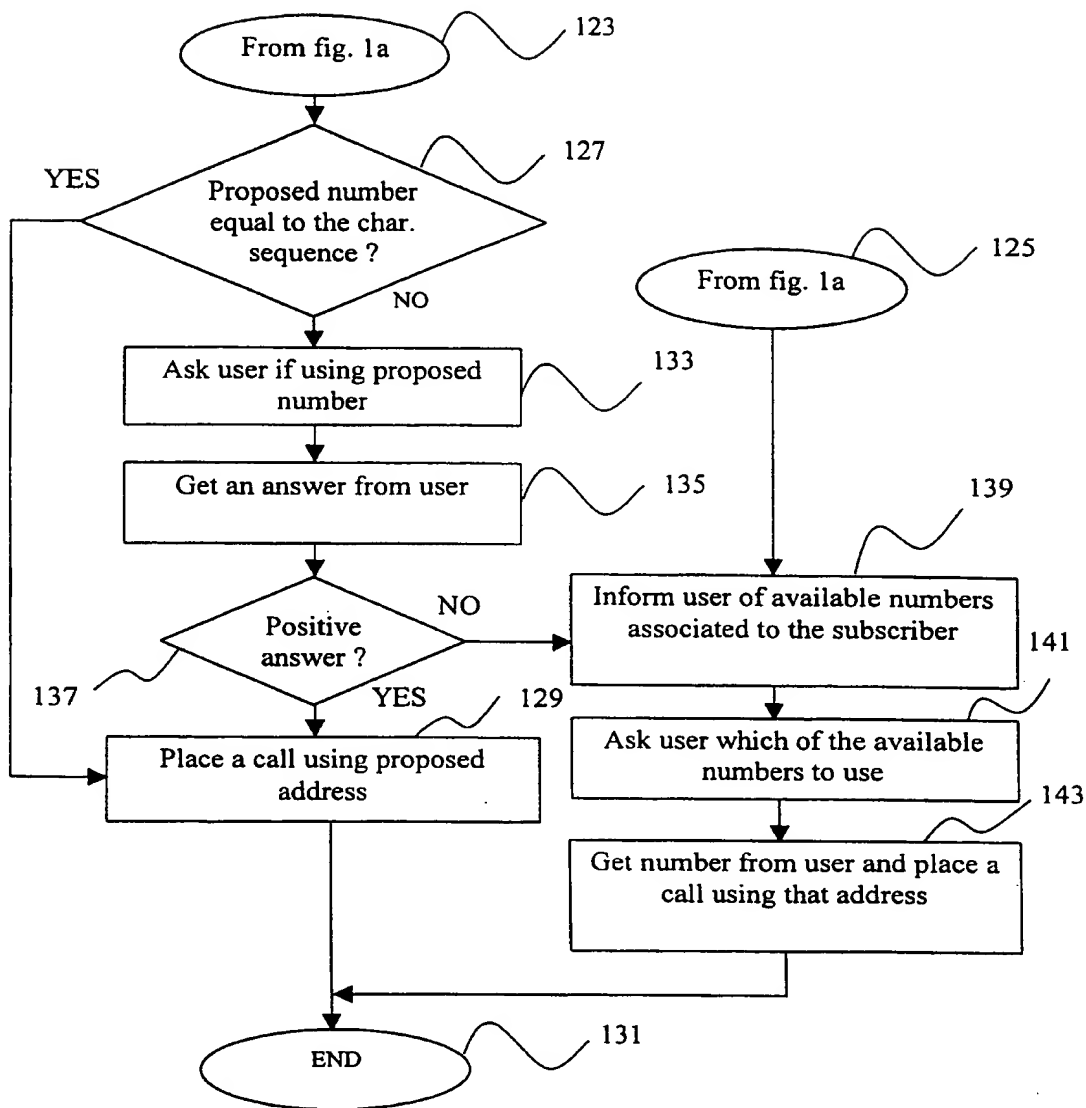


Fig. 1b

3(6)

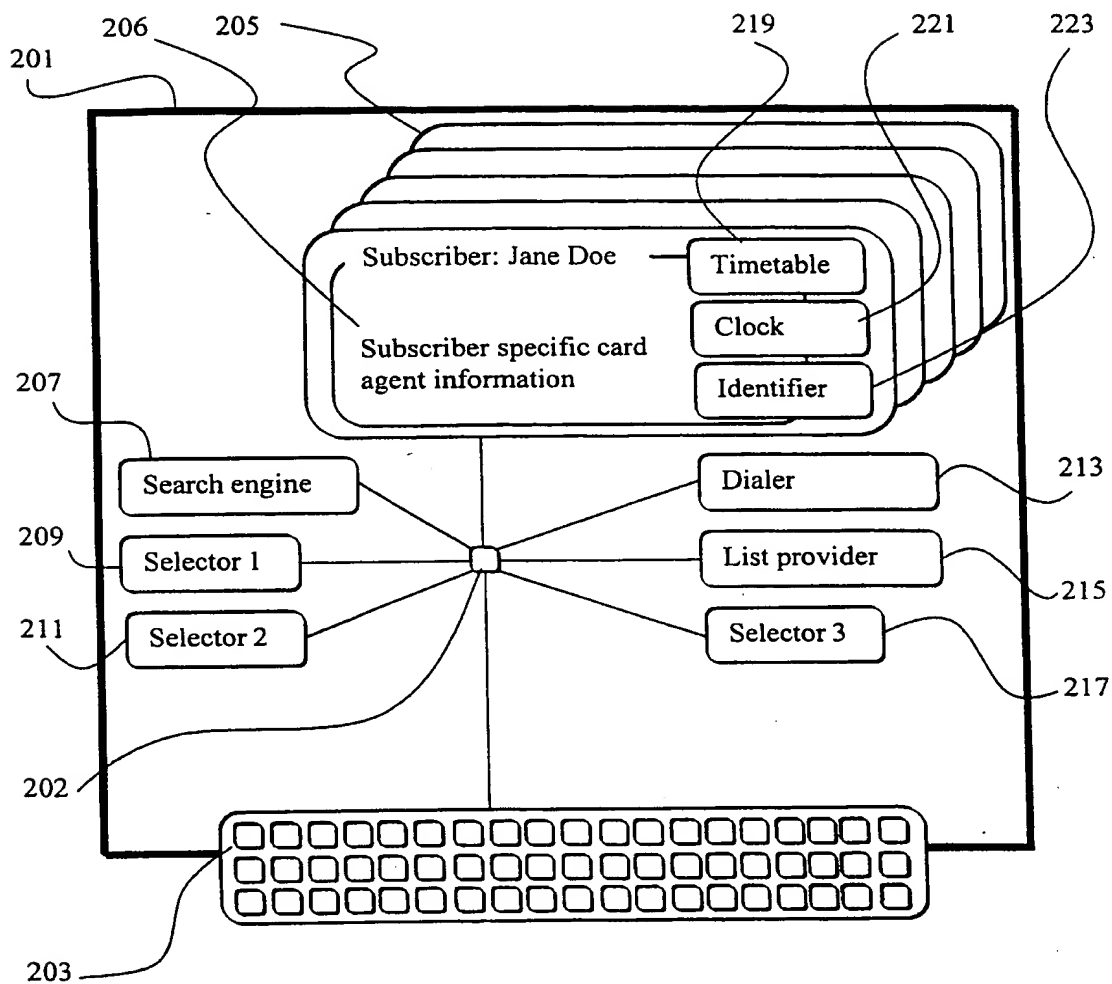


Fig. 2

4(6)

303

301

----- Call to: Doe -----

309

	First Name	Middle Name	Last Name
<input checked="" type="radio"/>	Jane		Doe
<input type="radio"/>	Jennifer	Anne	Doe
<input type="radio"/>	Steve	S.	Doerser

305

307

Choose one and press Continue

Continue

Cancel

311

313

Fig. 3

5(6)

401 303

----- **Call to: Doe** -----

First Name	Middle Name	Last Name
Jane		Doe

Adress

1234 Downthe Rd

Raleigh, NC 12345

USA

405 407 410

409 **Jane Doe currently at home.**  
**Calling Jane Doe at home 555-1215.**  
**To call Jane at home press Call. Otherwise press Other.**

411 413 313

Call Other Cancel

Fig. 4



6(6)

501 303

----- Call to: Doe -----

First Name	Middle Name	Last Name
Jane		Doe

405

507

511

☐ Work 555-1214

☐ Home 555-1215

☐ Mobile 555-1216

☒ Pager 555-1217

509 Choose one and press Call

513 Call 313 Cancel

Detailed description of Fig. 5: The figure shows a software window for making a call. At the top, a title bar contains the text 'Call to: Doe' flanked by dashed lines. Below this is a rounded rectangular area containing a table with three columns: 'First Name', 'Middle Name', and 'Last Name'. The 'First Name' field contains 'Jane', 'Middle Name' is empty, and 'Last Name' contains 'Doe'. To the right of the 'Last Name' field is callout 405. Below the table are four radio button options: 'Work' (with phone number 555-1214), 'Home' (555-1215), 'Mobile' (555-1216), and 'Pager' (555-1217). The 'Pager' option is selected, indicated by a filled circle. To the right of these options is callout 507. To the left of the radio buttons is callout 511. Below the radio buttons is the text 'Choose one and press Call' with callout 509. At the bottom of the window are two buttons: 'Call' (with callout 513) and 'Cancel' (with callout 313). Callout 501 points to the top-left corner of the window, and callout 303 points to the title bar area.

Fig. 5

# INTERNATIONAL SEARCH REPORT

Inter. Application No

PCT/US 98/21961

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 H04M1/274

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 G06F H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"ON-LINE DESKTOP ADDRESS BOOK AND AUTO-DIALER" IBM TECHNICAL DISCLOSURE BULLETIN, vol. 35, no. 2, 1 July 1992, pages 439-441, XP000313349 see 2nd line in figure 1 see the whole document	1-5
Y	---	6,7
Y	WO 96 38971 A (HARRIS CORP) 5 December 1996 see page 1, line 1-5 see page 2, line 1-8 see page 5, line 20 - page 6, line 11 --- -/--	6,7

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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Date of the actual completion of the international search

31 March 1999

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 98/21961

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 453 217 A (BOIVIE RICHARD H) 5 June 1984 see abstract see column 1, line 45 - column 2, line 4 see column 14, line 38-45 see figures 1-5 ---	1-5
A	"CALLING CARD INTERFACE FOR VISUAL TELEPHONY" IBM TECHNICAL DISCLOSURE BULLETIN, vol. 35, no. 4B, 1 September 1992, pages 291-293, XP000313950 see the whole document -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/21961

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9638971	A	05-12-1996	CA 2202747 A	05-12-1996
US 4453217	A	05-06-1984	NONE	